Teaching English Structure Using Inductive Versus Deductive Approach for the 2nd Semester Students of English Study Program of Nusa Nipa University Maumere in the Academic Year 2016/2017

WENDELINUS OSCAR JANGGO
Nusa Cendana University Indonesia

Abstract: This study is entitled “Teaching English Structure Using Inductive Versus Deductive Approach for the 2nd Semester Students of English Study Program of Nusa Nipa University in the Academic Year 2016/2017”. The problems of this study are: does Inductive Approach work more effective than Deductive Approach in teaching English Structure for the 2nd semester students of English Study Program of Nusa Nipa University, to what extent these two approaches influence students’ grammatical knowledge, and problems faced by the students in learning using these two approaches. The aims of this study are To know and to find out how effective it is to use Inductive Approach in teaching Structure for the students. The method of this research is a quantitative research. In collecting the data, the researcher used test and informal interview. The data were analyzed using SPSS version 21. The result of the analysis showed that inductive approach gives better result in students’ understanding and achievement in English Tenses rather than deductive approach. These results showed that Inductive approach worked more effective than Deductive approach especially in teaching English Tenses for the Second Semester Students of English Study Program of Nusa Nipa University.

Keywords: Teaching English Structure, Inductive Approach, Deductive Approach.

Introduction

In this century, the use of language especially English as a tool of communication becomes very crucial in every aspects of human life. In Indonesia it is English that stands as the first foreign language to be taught from junior high schools up to the University level since 1945, the beginning of their independence. English is significant in that it dominates trading, transport, foreign affairs, science and technology (Bire, 2016:6-7). The development of English in the field of education is growing continuously as it seen recently. stated that after more than half a century Teaching English as a Foreign Language (TEFL) for Junior High Schools up to the University levels in Indonesia, shows amazing development. There was a growing thought of teaching English earlier than what was going on so far. It implies that the teaching of English as a Foreign Language in Indonesia is becoming so important as to start from elementary education.
In Indonesia, English is taught as a foreign language that has four skills, namely listening, reading, speaking and writing. The four skills are supported by the learning of language elements. They are grammar, vocabulary, pronunciation and spelling. The knowledge of language grammar becomes one of the central issues especially in foreign language learning, because without that, one cannot find or understand the meaning of the sentence correctly and precisely. Thus the teaching of grammar especially for students of English Language Study Program is one of the best ways to prepare them as a future English Teacher and obviously they should master the grammatical structure and also other language skills as well. In the case of learners, the knowledge of grammar will help them to put or construct sentences in the right order. Therefore, the teaching of grammar should cover some important areas, such as English structure, sentence patterns, meaning, and also its usage.

In the case of Teaching English as Foreign Language classroom, inductive and deductive teaching are two different approaches used in teaching grammar. Inductive teaching (sometimes known as inquiry or discovery teaching) involves giving the students examples of language and working with them to come up with grammatical rules. It is a more student centered approach to learning. Wang (2002:224) stated that the involvement of learners in making meaning with their teacher and their peer as the key factor in determining success. Alternatively, Norland (2006:20) stated that deductive teaching begins by giving students the rules and working with them to produce language. This is more teachers centered.

Inductive approach is generally more stimulating and requires greater student participation. Since students are more actively involved in acquiring knowledge (rather than just passively sitting and receiving information) in the end they end up learning with deeper understanding.

In Nusa Nipa University-Maumere, especially in English Education Study Program Structure is one of the compulsory or core subject to be taught started from the 1st semester to the 4th semester. It covers some theoretical and practical knowledge of English Grammar. As grammar is considered as one of the most important elements in learning English, an effective and suitable teaching approach should be chosen by the lecturer in order to answer students’ needs. In Nusa Nipa University, deductive approach is a kind of approach which commonly used by the Grammar lecturer, even though there is a newest approach in teaching Grammar introduced by the educational experts. As a result, most of the students of English Study Program encounter a problem and find difficulties in applying the material in the real situation especially in writing. Grammar class becomes uninteresting because students are demanded to memorize all the rules or patterns without have a good understanding on it. Therefore, in order to solve the problem mentioned above, the new approach should be taken in to account by the Grammar lecturer in Nusa Nipa University.
Hypothesis

Null Hypotheses (H0) can be:

\[ H_0 = \mu_1 = \mu_2 \text{ = Teaching tenses inductively to improve students’ grammatical knowledge is less effective than teaching tenses deductively or equally effective to teach tenses deductively.} \]

Alternative hypothesis (H1) can be:

\[ H_1 = \mu_1 \neq \mu_2 = \text{ Teaching tenses inductively to improve students’ grammatical knowledge is more effective than teaching tenses deductively.} \]

REVIEW OF RELATED LITERATURE

In teaching and learning process, especially in teaching English Grammar, we are familiar with the term teaching approaches. In the case of grammar teaching especially in English as a foreign language classroom, there are two common approaches used, namely deductive approach and inductive approach and each of them is separated each other in terms of way of teaching.

Deductive Approach

Deductive approach derives from grammar based approaches. Rivers & Temperley (1978:110) argued that the deductive approach represents a more traditional style of teaching in that the grammatical structures or rules are dictated to the students first, a more effective and time saving way under certain circumstances, namely monolingual classes. In addition, Norland (2006:21) stated that in this approach, students are asked to translate the text word to word. While translating, students’ attention is brought to the appropriate grammar points to be taught. In the implementation, the teacher presents the grammatical structure or rule and students practice of the structure.

Deductive teaching is known as a traditional approach in which information about target language and rules are driven at the beginning of the class and continued with examples. Dealing with grammar teaching in the classroom, Thornbury (1999:30) pointed out that deductive approach is also well known as rule driven learning. Deductive approach maintains that a teacher teaches grammar by presenting it from the general one to the specific one. In other words, a teacher starts it with showing and explaining the grammatical rules, its usage, and also followed by some examples. In the next part, when a teacher concludes that his or her students already understood and got the idea of the grammar being taught, he or she will ask his or her students to apply and practice the rules given by constructing various examples of sentences.

Inductive Approach

Inductive approach was found or introduced in the reign of direct method. The basis of this method was developed in Europe by Francois Gouin in the 1885s. The goal of this method is
to teach students, usually adults how to converse in everyday situations in another language. From this idea developed the direct method as an antithesis to the Grammar-Translation approach. Other aspects of the direct method include classroom instruction exclusively in the target language, only everyday language is taught, and grammar being learned inductively (Norland, 2006:18). Klauer & Phye (2008: 86) stated that Inductive reasoning aims to detect generalizations, rules or regularities. Marx (2009) added that the detection of rules and regularities is a basic component of information processing in the human brain (p.40). Language acquisition involves detecting and generalizing rules (p.42).

In the case of pedagogical grammar, many experts argue that inductive approach can also be called Rule-discovery learning. Nunan (1999) identified Inductive approach as a process where learners discover the grammar rules themselves by examining the examples. In an inductive approach, it is also possible to use a context for grammar rules. That is to say, learners explore the grammar rules in a text rather than isolated sentences. Thornbury (1999: 49) stated that in an inductive approach, learners are provided with examples which include the target grammar that they will learn. Then learners work on the examples and try to discover the rules themselves or in other words they learn through experience. When students obtain the grammar rules, they will practice using it by creating their own examples. Widodo (2006:127) defined induction as observing a number of specific instances and from them infer a general principles or concept. In inductive instruction, students are led to analyze the data or scenario and solve the problem, creating the need for facts, rules and principles, at which point they are either presented with the needed information or helped to discover or for themselves (Prince & Felder, 2006: 123).

In language learning, especially in grammatical learning, the inductive approach represents a different style of teaching where the new grammatical rules or patterns are presented to the students in a real language context. The students learn how to use the structure through practice of the language in context, and later have a good understanding about the rules from the practical examples. It can be said as a student-centered learning.

The Main Differences between an Inductive Approach and a Deductive Approach in Grammar Teaching

A deductive an inductive approach basically differentiate in lesson procedures, learner roles, teacher roles, and usage of metalanguage in the teaching process. However, it should be noted that an inductive approach does not eliminate directly the role of teacher in teaching and learning process. Teachers take a position as a facilitator to lead the learners through practicing, evaluate the learners’ knowledge, and also guide them to the new knowledge. Inductive approach can also be said as student-centered learning, meaning that this approach gives the students more responsibility for their own learning. Prince and Felder (2006:123) proposed that this approach can also be labeled as constructivist methods, which are based on the assumption that students construct their own versions of reality rather than simply absorbing versions presented by their
teachers. This approach also adopt active learning, which requires the students to discuss questions in group and solve problems in class. Thus, the teacher’s primary role in inductive approach is to help students learn, rather than teach. Therefore, Inductive method approach can encourage the students to continue learning inside or outside the classroom through discovery and gradually to become a more independent learner.

Deduction, on the other hand, can be explained as a form of reasoning in which one proceeds from general principles or laws to specific cases (Carr, 2009:47). A deductive approach is based on the top-down theory which the presentation and explanation of grammar rules take the precedence over teaching. The material is taught from the whole to parts with the purpose of making them understand the grammar rules and structures. In the next part, the teacher will give them some examples and finally they are expected to produce or construct their own examples. Applying deductive or inductive approach in teaching English grammar also depends on students’ variety in the classroom. All learners are different and this makes they learn in different ways, for instance their needs, ages, background, and level of understanding. Those factors mentioned, should be taken into consideration by the teacher for choosing suitable teaching strategy. To illustrate this, Thornbury (1999:38) stated that the deductive approach is particularly appropriate for adult learners whose learning style and expectations predispose them to a more analytical and reflective approach to language learning. This of course means that it will not be suitable for learners who would rather learn through the experience of communicating and it is particularly inappropriate for very young learners.

RESEARCH METHOD

In doing this experiment research the researcher divided the students in to two classes, the first one as an experimental class and the second one as a control class. There are about 34 students of English Study Program, thus each class consisted of 17 students. The experimental group was exposed to a treatment, by implementing inductive approach in teaching English Grammar and the result was compared with the control class which does not receive the treatment. In the first stage these two classes were tested by using the same material namely pre-test, and after that, treatments were given to experimental class using Inductive Approach and in the final part, a posttest was given to know their achievement.

Population and sample

The population of this research is the second semester students of English Study Program of Nusa Nupa University Maumere. The researcher used total sampling because the numbers of the students in the class are very small. Thus, all of the 34 students were involved as samples or without sampling.
The Technique of Analyzing the Data

In analyzing the data the researcher used Quantitative method. In order to know how far the implementation of inductive approach influences students’ mastery, the researcher used parametric statistics to analyze the data. To prove the hypothesis, the result of both experimental group and control group’s scores were compared by using $t_{test}$. In this research, the researcher used independent group $t_{test}$. It assesses whether the means of two groups are statistically different from each other. In other words, $t_{test}$ is commonly uses to determine whether the mean of a population significantly differs from a specific value or from the mean of another population. In this case, the level of significant degree with $\alpha = 0.05$ was used. Before conducting the independent group $t_{test}$, there are some analysis functioned as a pre-requisite analysis, namely normality and homogeneity test.

FINDINGS AND DISCUSSION

In this part, the researcher analysed the result of students pre-test and post-test in both classes, then parametric statistics consisting of the assumption of normal distribution, homogeneity, and also independent group $t_{test}$ are described. In the next part, the findings of qualitative data are provided to support quantitative data. As has been stated in the previous research, before conducting $t_{test}$, there are some analysis functioned as a pre-requisite analysis, namely normality and homogeneity test. The analysis of statistical assumption and $t_{test}$ Is presented step by step started from Pre-test to students’ gain score. The results of statistical assumptions are presented in the following description:

Statistical Assumption and T-Test of Pre-Test

Assumption of Normal Distribution

The analysis can be seen in the following table:

<table>
<thead>
<tr>
<th>Class</th>
<th>Kolmogorov-Smirnov$^a$ Statistic</th>
<th>Kolmogorov-Smirnov$^a$ Df</th>
<th>Kolmogorov-Smirnov$^a$ Sig.</th>
<th>Shapiro-Wilk Statistic</th>
<th>Shapiro-Wilk Df</th>
<th>Shapiro-Wilk Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest score Control</td>
<td>.174</td>
<td>17</td>
<td>.180</td>
<td>.933</td>
<td>17</td>
<td>.245</td>
</tr>
<tr>
<td>Eksperimen</td>
<td>.206</td>
<td>17</td>
<td>.053</td>
<td>.817</td>
<td>17</td>
<td>.004</td>
</tr>
</tbody>
</table>

a. Lilliefors Significance Correction
Based on the data above, it can be seen that the average pretest of experimental class is 56.65 and the control class is 50.53. The data from the table then analyzed by using SPSS to measure the normality of the data from the pretest of experimental class and the control class. From the table above, it can be seen that the result of normality test of pre-test of both classes with the level of 5% (\(\alpha = 0.05\)) is the value Asymp. Sig. for the control class is 0.180 which is higher than level of \(\alpha = 0.05\) (0.180 > 0.05) and Asymp value. Sig. of experiment class is 0.053 which also higher than level of \(\alpha = 0.05\) (0.053 > 0.05). Thus, it can be concluded that the residual is distributed normally, or in other words, \(H_0\) is accepted.

**Assumption of Homogeneity**

**Table 4.2 Test of Homogeneity of Variances**

<table>
<thead>
<tr>
<th>Pretestscore</th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.522</td>
<td>1</td>
<td>32</td>
<td>.122</td>
</tr>
</tbody>
</table>

The results of homogeneity test in pretest of the experimental class and control class with a level of 5% (\(\alpha = 0.05\)), shows that the value Asymp. Sig. is 0.122 which is higher than level of 5% (\(\alpha = 0.05\)) (0.122 > 0.05). Thus it can be concluded that the data obtained from the analysis is homogeneous, meaning that \(H_0\) should be accepted.

**T-test analysis**

As has been stated above, once the data is known normal and homogeneous, it can be a decision for conducting the comparative test using T-test. The T-test assesses whether the means of two groups are statistically different from each other. The researcher used Independent group T-test because it is used to compare the means of two different groups. Comparative hypothesis testing is useful to know whether the data is significantly different or not.

The analysis of the data obtained can be seen in table 4.3 as follows:

**Table 4.3 Independent Group T-test**

<table>
<thead>
<tr>
<th>Independent Samples Test</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
From the table above, it can be seen that the Sig. (2-tailed) in pretest of control class and experiment class is 0.062 which is higher than confidence level of 5% (0.062 > 0.05). Thus, it can be conclude that H0 is accepted, which means students in control an experiment class did not differ significantly or in other words they have the same basic or prior knowledge of English Grammar.

**T-test analysis of Post-test**

The result of analysis can be seen in the following table:

**Table 4.4 Independent Group T-test**

**Independent Samples Test**

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>Sig.</td>
</tr>
<tr>
<td>---</td>
<td>------</td>
</tr>
<tr>
<td>Pretest score</td>
<td>Equal variances assumed</td>
</tr>
<tr>
<td></td>
<td>Equal variances not assumed</td>
</tr>
</tbody>
</table>
From the table above, it can be seen that the Sig. (2-tailed) in Post-test of control class and experiment class is 0.002 which is lower than confidence level of 5% (0.002 <0.05). Thus, it can be conclude that H0 is rejected, which means the students in control class and experimental class have different learning outcomes in English Grammar.

**T-Test of Gain Score**

The last part of this quantitative analysis is Gain Score analysis. As has been stated in the previous chapter, in order to know the effectiveness of the approaches that have been applied, an analysis of Gain score should be conducted. The purpose of this analysis is to measure students’ improvement in both classes from pre-test to post-test and also their achievement in learning English Structure, thus the result can be compared to find out the conclusion. Below are the descriptions of Gain score analysis:

**T-test analysis**

Further test using independent group T-test was applied to determine whether or not the data is significantly different.
From the table above, there are some important data gained in the analysis, such as the minimum value, maximum value and the average value of gain score of experiment class and control class. The minimum value of the experimental class is 0.60, while the minimum value of control class is 0.00. The maximum value of the experimental class is 0.705, while it is 0.500 in control class. The average value of N Gain in experiment class is 0.416, while the average value of N Gain in control class is 0.204. Thus, it can be concluded that the N-Gain in experimental class is higher than the N-Gain in control class.

From the table above it can be seen that the Asymp Sig. (2tailed) of T-test for the data of N-Gain in control class and experiment class with a level of 5% (\(\alpha = 0.05\)) is 0.005, which is lower than 0.05 (0.005 < 0.05) and it means that the result is significantly different. Thus, it can be concluded that the students in control class and experiment class have different learning outcomes in learning English Tenses.

This can also be proved by looking at the average score of experiment class and control class started from pre-test to post-test. The average score of pretest of experiment class is 56.65 while its average score in post-test after getting treatment using inductive approach is 71.94 which is greater than that of pre-test. The conclusion is that, inductive approach works effectively to improve students’ grammatical knowledge especially in learning English Tenses.

The researcher also compared the results of pre-test and post-test in control class, in order to know whether there was a significance difference. The average score (mean) of post-test using deductive approach is higher than that of pre-test, where the average score of pre-test of control class is 50.53, while it’s 60.65 in post-test. Thus, it can be concluded that deductive approach also works effectively to improve students’ grammatical knowledge especially in learning English Tenses. In order to prove the research hypotheses, the researcher then calculated the gain scores of each group. Gain score was calculated from the different scores of pre-test and post-test. It is used to know the effects of teaching English tenses inductively. The hypotheses can be seen in the following description:

1. \(H_0 = \mu_1 = \mu_2 = \) Teaching tenses inductively to improve students’ grammatical knowledge is less effective than teaching tenses deductively or equally effective to teach tenses deductively.
2. \(H_1 = \mu_1 \neq \mu_2 = \) Teaching tenses inductively to improve students’ grammatical knowledge is more effective than teaching tenses deductively.
There are significant differences in the implementation of learning approaches on learning outcomes. It can be seen in the average of the gain score. The average score of the gain in experiment class is 0.416, so the result of post-test after having treatments is 41.6% greater than that of pre-test, while the average score of the gain in control class is 0.204 or 20.4% greater than that of pre-test. As a result, H0 is rejected, and H1 is accepted, thus the second hypothesis is proven. Thus it can be concluded that teaching English Tenses using inductive approach is more effective than deductive approach.

**Discussion**

Throughout this section, the researcher will discuss some important points to answer research questions 1, 2, and 3. The main goal of this study is to compare the effectiveness of using inductive approach than deductive approach in teaching English Tenses for the 2nd semester students of English Study Program of Nusa Nipa University Maumere in the academic Year 2016/2017. This research found that inductive approach gives better result in students’ understanding and achievement in English Tenses rather than deductive approach. This can be proved by looking at the result shown from statistical analysis using SPSS 21 software. The results show that the average score (mean) and the Gain Score of experiment class is higher than control class, where the average score of experiment class (after receiving treatment) is 71.94, while the mean of control class is 60.65. The average value of N Gain in experiment class is 0.416, while the average value of N Gain in control class is 0.204. These results showed that Inductive approach worked more effective than Deductive approach especially in teaching English Tenses for the Second Semester Students of English Study Program of Nusa Nipa University in the Academic Year 2016/2017.

The result of this research is similar to the research conducted by Rokni (2009). Rokni studied the effects of explicit-inductive and explicit-deductive approaches comparatively. The participants were 110 Iranian University EFL students. There was an experimental group of 55 students and a control group of 55 students. In the experimental inductive group, the teacher provided explicit corrective feedback to the rules or patters that the participants discovered. The deductive group received traditional explicit-deductive teacher-fronted instruction. A pre and post-test and a delayed post-test was administrated. The results showed that the inductive group scored significantly higher than the control group.

**Conclusion and Suggestion**

This research found that inductive approach gives better result in students’ understanding and achievement in English Tenses rather than deductive approach. These results showed that Inductive approach worked more effective than Deductive approach especially in teaching English Tenses for the Second Semester Students of English Study Program of Nusa Nipa University in the Academic Year 2016/2017. Therefore, the researcher suggests that, in teaching and learning process especially in teaching English Structure, educators should apply an
appropriate approach in order to fulfill students' need and also adjust their approach with the real context and of the students. It is hoped that, by this researcher, English educators will enrich their knowledge dealing with the application of teaching approach, and then will also find a new and appropriate teaching approach that would improve students’ competence.

References


Internet: